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Electronic Data Interchange Reading Material

An Annotated Bibliography Report
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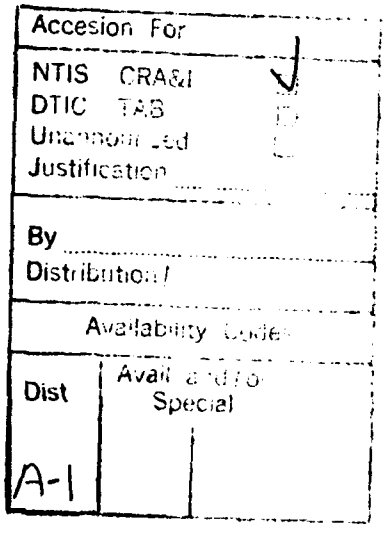
PREFACE

This bibliography contains abstracts of technical reports dealing with electronic data interchange (EDI) used in a wide range of Department of Defense applications. We list 91 citations in chronological order, categorized in the following functional area: management and planning, software, telecommunications, standards/guidelines, security, transportation, procurement/contract management, finance, and supply/ maintenance. We also provide a listing for a quicker form of reference. The information addressed in this annotated bibliography is based on the data sources provided by the National Technical Information Service (NTIS) in Springfield, VA. In general, unless otherwise stated, each document can be ordered from NTIS by calling (703) 487-4650 and using the specified accession number.



CONTENTS

MANAGEMENT AND PLANNING

Implementation of Electronic Data Interchange in the Department of Defense: Lessons Learned from Private Industry

The Department of Defense (DoD) has emphasized Electronic Data Interchange (EDI) since 1988 when the Deputy Secretary of Defense issued a policy directive that EDI was to become "the way of doing business" for DoD in the future. The focus of this research is on how private industry is implementing EDI, and specifically how EDI is being used in the procurement and acquisitions environment. The results from a survey of private industry showed that (1) EDI use will continue to grow in the procurement environment and that most impediments to EDI will be resolved with time and experience; (2) EDI must be adopted by the critical mass before the full benefits and savings will be recognized by DoD and industry; (3) top level management support and a detailed, well thought out strategic EDI plan are mandatory for successful implementation of EDI; and (4) the transaction sets currently being used by private industry for procurements and acquisitions limit DoD EDI opportunities for large purchases. Recognizing these conclusions, recommendations to DoD are then presented.

Turner, R. B. Naval Postgraduate School, Monterey, CA. 1 Jun 93 123 p.
Accession Number: AD-A269 532/8/XAB

Industry Sector Analysis, Canada: Electronic Data Interchange (Export trade information)

The market survey covers the electronic data interchange market in Canada. The analysis contains statistical and narrative information on projected market demand, end-users; receptivity of Canadian consumers to U.S. products; the competitive situation, and market access (tariffs, non-tariff barriers, standards, taxes, distribution channels). It also contains key contact information and information on upcoming trade events related to the industry.

Falconer, I. International Trade Administration, Ottawa (Ontario). U.S. and Foreign Commercial Service. Mar 93 27 p.
Accession Number: PB93-177087/XAB

Industry Sector Analysis, Hong Kong: Electronic Data Interchange (Export trade information)

The market survey covers the electronic data interchange (EDI) market in Hong Kong. The analysis contains statistical and narrative information on projected market demand, end-users; receptivity of Hong Kong consumers to U.S. products; the competitive situation, and market access (tariffs, non-tariff barriers, standards, taxes, distribution

channels). It also contains key contact information and information on upcoming trade events related to the industry.

International Trade Administration, Washington, DC. U.S. and Foreign Commercial Service. 1993 14 p.
Accession Number: PB93-159804/XAB

Use of Information and Manufacturing Technologies as Turnaround Strategies

To compete successfully in the global environment, companies have been encouraged to implement information technology as well as other technologies. The premise is that better information will result and that this will lead to improved decision making. This research examines the planning and control of operations in three organizations. Each of these organizations in the computer industry faced serious pressure to improve or else. Operating managers responded by implementing networked computer systems, total quality management, just-in-time, electronic data interchange, and other information systems. Significant improvements in design, quality, manufacturing cycle times, inventory control, space utilization, and delivery were reported.

San Miguel, J. G. Naval Postgraduate School, Monterey, CA. Dept. of Administrative Sciences. Report No.: NPS-AS-93-010. 21 Oct 92 24 p.
Accession Number: AD-A259 855/5/XAB

A Handbook for DoD and Small Business. Forging a Partnership Through EDI

The purpose of this handbook is to acquaint small business with the concepts of electronic data interchange (EDI) and how EDI will be used in the future by the Department of Defense to conduct business. The handbook introduces the reader to EDI, discusses how and why EDI is used in business, and explains what is needed to start using EDI in a small business.

Hamilton, W. P.; Henderson, M. M. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203LN3 Jul 92 66 p.
Accession Number: AD-A261 373/5/XAB

EDI Planning and Implementation Guide

This document presents a methodology that permits DoD activities to develop EDI business plans. It uses structured worksheets to walk the user through the process of identifying EDI opportunities, performing an economic analysis of those opportunities, and developing rational EDI implementation plans. It also contains educational material on EDI legal and security issues, EDI transactions sets and message standards, and procedures for submitting EDI projects to both Executive Agent and the Office of Defense Information for funding.

Hardcastle, T. P. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203RD1 Jun 92 122 p.
Accession Number: AD-A255 737/9/XAB

Information Technology: A Force for Organizational Change

No abstract available.

Bowen, W. R. Industrial Coll. of the Armed Forces, Washington, DC. Report No.: NDU-ICAF-92-S10 Apr 92 30 p.
Accession Number: AD-A261 986/4/XAB

Issues in Open EDI

Diverse aspects of autonomy in Electronic Data Interchange (EDI) are identified and analyzed. It is made plausible that autonomy is the key issue in the EDI environment. Based on the observation, an examination is made of how the work within EDI environments must be organized and how an EDI systems architecture should look. The focus is on the integration of EDI into business applications and on the Open EDI ideas put forward by the special working group on EDI (SWG-EDI). It is shown that the globally and locally controlled domains must be separated from each other both conceptually and in reality. The way these separately controlled domains are reconciled is crucial from the autonomy-preservation point of view. A tentative reference architecture, the need for which was identified by the working group, is also suggested. One conclusion is that there should be two reference models, rather than only one. They are the Communication Reference Model, and the Systems Reference Architecture. They point out the places where integration could happen and how it should be done. It is further suggested that the future standardization work should include automatic scenario development tools.

Veijalainen, J. Valtion Teknillinen Tutkimuskeskus, Espoo (Finland). Lab. for Information Processing. Report No.: VTT/RN-1323; ISBN-951-38-4055-7 c1992 35 p.
Country of Publication: Finland
Accession Number: PB93-165322/XAB

Internal Control in an EDI Environment

Electronic Data Interchange (EDI) is the electronic transmission of standard business documents in machine-readable format between parent companies and respective trading partners. As the use of EDI has grown, there have been the associated risks due to an uncontrolled environment. Accordingly, the necessity for effective internal controls in an EDI environment is on the rise. This thesis evaluates and analyzes the feasible internal controls in an EDI environment and provides recommendations for further development. It discusses the basic concepts of EDI, general control and application control issues, as well as legal issues related to an EDI environment.

Bae, D. H. Naval Postgraduate School, Monterey, CA. Dec 91 85 p.
Accession Number: AD-A245 869/3/XAB

Information Resources Management Plan of the Federal Government

The document includes a five-year plan for meeting the automatic data processing and telecommunications needs of the Federal government. It also contains the eleventh annual report of the Information Collection Budget (ICB) of the United States Government. The document also includes a series of cross-cutting analyses covering agency computer

security plans, disaster recovery for information technology operations, and developments in electronic commerce. The publication concludes with strategic overviews that discuss how agencies intend to utilize information resources to meet programmatic goals. These strategic overviews also discuss agency progress against previously announced plans.

Office of Management and Budget, Washington, DC. Office of Information and Regulatory Affairs. Sponsor: General Services Administration, Washington, DC.; Department of Commerce, Washington, DC. Report No.: ISBN-0-16-036004-8 20 Nov 91 323 p.
Also available from Supt. of Docs.
Accession Number: PB92-147198/XAB

Computer Simulation Analysis of the USAF Vehicle Allowance/Authorization Process

This research examined the effects of the incorporation of Electronic Data Interchange (EDI) on the USAF vehicle allowance/authorization process. The study utilized a computer simulation model to mimic the flow of the AF form 601, Equipment Action Request, as it is submitted at base level and coordinated through the MAJCOM and WR-ALC. The hypothesis was that the allowance/authorization cycle time could be made shorter by transmitting the information contained on the form 601 electronically, rather than mailing the form to each coordinating agency. In order to compare the process with and without the use of EDI, two computer simulation models were developed, one which reproduced the current system and another whose variables and parameters were modified to simulate the effects of EDI. The output from the models was compared by using a paired-t test to determine differences in average system residence time for the 601. The incorporation of EDI was found to produce modest improvements in 601 residence times—the time elapsed in the coordination process between 601 submittal and approval. Mean residence times were reduced by approximately nine days by transmitting the information electronically. Additionally, it was found that reductions in processing times hinted at even greater reductions in average 601 residence times.

Butler, C. T. Air Force Inst. of Tech., Wright-Patterson AFB, OH. School of Systems and Logistics. Report No.: AFIT/GLM/LSM/91S-8 Sep 91 106 p.
Accession Number: AD-A246 730/6/XAB

Architectural Guidelines for Multimedia and Hypermedia Data Interchange: Computer Aided Acquisition and Logistics Support/Concurrent Engineering (CALS/CE) and Electronic Commerce/Electronic Data Interchange (EC/EDI)

This study proposes the best strategy to integrate information systems to effectively support several common Department of Defense initiatives, in line with Corporate Information Management and Total Quality Management principles. This research examines Computer-aided Acquisition and Logistics Support/Concurrent Engineering, Electronic Commerce/Electronic Data Interchange, Modernization of Defense Logistics Standard System, and the Defense Information System. The study proposes an interchange architecture on top of the OSI-compliant Defense Information System, which serves as a telecommunications infrastructure, for multimedia and hypermedia data interchange. This

interchange architecture is necessary to successfully implement the functions and applications of DoD activities.

Korzyk, A. D. Naval Postgraduate School, Monterey, CA. Sep 91 106 p.
Accession Number: AD-A246 201/8/XAB

Modernization of Defense Logistics Standard Systems (MODELS). Volume 1. Establishing the Functional Baseline

In the 1960s, DoD established single-item managers for acquiring, managing, and distributing material. That approach required significant exchanges of logistics data among the Military Services and Defense agencies. To support those exchanges, DoD defined standard message formats, data elements, and procedures, thereby creating the Defense Logistics Standard Systems (DLSS). The DLSS have successfully supplied DoD logistics transactions for nearly 30 years. However, neither the DLSS nor their supporting Service or agency automated data processing systems have been modernized as rapidly as the surrounding environment, and neither has kept pace with user information requirements. To capitalize on technology advances and satisfy its logistics information requirements into the next century, DoD established the MODELS project to redesign the DLSS. This report documents the progress made in the MODELS program and recommends actions to further improve DoD's logistics capabilities. Principally, the Defense Logistics Management System (DLMS) -- Functional Baseline, Electronic Data Interchange (EDI) Standards was released in May 1990. The DLMS (the DLSS replacement system) format is derived from the American National Standards Institute Accredited Standards Committee X12 for EDI, tailored to meet DoD-unique requirements. EDI is a rapidly growing tool used in industry to reduce paper and improve business efficiency and has recently been adopted as a Federal information processing standard.

Egan, D. F.; Featherstone, H. L.; James, W. T.; Luster, S.; McEwen, M. P.; Ott, J. J.; Parker, R. W.; Wilson, D. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL902R1-Vol-1 Sep 91 119 p.
Accession Number: AD-A243 213/6/XAB

Electronic Data Interchange

Electronic data interchange (EDI) is the intercompany, computer-to-computer exchange of business documents in standard formats. The direct benefits of EDI consist in cost savings, operational accuracy, and speedy processing of transactions. This thesis provides guidelines to develop an EDI (Electronic Data Interchange) system. It discusses the basic concepts, standards, data mapping, hardware and software requirements, and networking requirements. Also discussed are some auditing and security issues in implementing EDI. Electronic Data Interchange (EDI) is fast becoming the standard way of exchanging business documents, not only in this country but also in the rest of the world. EDI provides a faster, more accurate, less costly method of communication than do traditional methods of business communications such as mail, telephone, and personal delivery. However, EDI is doing more than just changing how businesses communicate; it is changing the way businesses operate. Electronic data interchange is changing industry. Trading relationships are changing, management philosophies are changing, and production techniques are changing.

Chung, J. D. Naval Postgraduate School, Monterey, CA. Mar 91 85 p.
Accession Number: AD-A242 959/5/XAB

Paperless Material Inspection and Receiving Report: A Strategy to Streamline Acquisition and Reduce Paperwork

The Department of Defense is committed to streamlining the acquisition process to increase productivity in both the public and private sectors. One modern method to streamline business practices is to convert paper-based systems to automated processing using the techniques of electronic data interchange (EDI), as defined by the American National Standards Institute (ANSI). To this end, DoD sponsored an examination of the feasibility of converting the widely used, paper-based Material Inspection and Receiving Report (MIRR), DD Form 250, into an electronic, paperless system. This report presents the case for conversion to EDI, and because of time and resource constraints, recommends a phased implementation. Our report outlines existing inspection and acceptance policy, the various uses of the MIRR, and MIRR preparation and distribution requirements. We found that the paper-based MIRR and Military Standard Contract Administration Procedures (MILSCAP) Shipment Performance Notification (SPN) carry similar data and serve similar purposes, leading us to conclude that the MILSCAP SPNs could be replaced by an EDI-based MIRR. We recommend that DoD examine inspection and receiving report data requirements in order to take advantage of the economies and streamlining potential (such as reduced data requirements) afforded by EDI-based systems. Apparently, too many copies of the MIRR are being sent to some locations and other locations need only a limited number of data elements because they already have most of the information in their data bases.

Luster, S. Logistics Management Inst., Bethesda, MD. Report No.: LMI-AF005R1 Mar 91 160 p.
Accession Number: AD-A235 201/1/XAB

Transforming Cross-Industry Practices into EDI: The Business Case for Scenario Modelling. International Congress of EDI Users (3rd). Held in Brussels, Belgium on September 4-6, 1991

The presentation on Business Scenario Modelling for Electronic Data Interchange (EDI) (BSM-E) serves as a basis for further discussion and work required for the transformation of global business through EDI to the mutual benefit of all parties involved, (e.g., users, suppliers, government agencies, etc). The presentation is based on the premise that the Information Age and in particular EDI can and should be based on "win-win" scenarios. It is based on the assumptions that the definition of Open-edi and related concepts on what is EDI will serve as a base reference ensuring global interoperability of EDI standards and services.

Knoppers, J. V. T. Canaglobe International, Inc., Montreal (Quebec). 1991 16 p.
Accession Number: PB92-169127/XAB

Information Logistics: A Production-Line Approach to Information Services

Logistics can be defined as the process of strategically managing the acquisition, movement, and storage of materials, parts, and finished inventory (and the related information flow) through the organization and its marketing channels in a cost effective manner. It is concerned with delivering the right product to the right customer in the right place at the right time. The logistics function is composed of inventory management, facilities management, communications unitization, transportation, materials management, and production scheduling. The relationship between logistics and information systems is clear. Systems such as Electronic Data Interchange (EDI), Point of Sale (POS) systems, and Just in Time (JIT) inventory management systems are important elements in the management of product development and delivery. With improved access to market demand figures, logisticians can decrease inventory sizes and better service customer demand. However, without accurate, timely information, little, if any, of this would be feasible in today's global markets. Information systems specialists can learn from logisticians. In a manner similar to logistics management, information logistics is concerned with the delivery of the right data, to the ring customer, at the right time. As such, information systems are integral components of the information logistics system charged with providing customers with accurate, timely, cost-effective, and useful information. Information logistics is a management style and is composed of elements similar to those associated with the traditional logistics activity: inventory management (data resource management), facilities management (distributed, centralized and decentralized information systems), communications (participative design and joint application development methodologies), unitization (input/output system design, i.e., packaging or formatting of the information), transportations (voice, data, image, and video communication systems), materials management (data acquisition, e.g., EDI, POS, external data bases, data entry) and production scheduling (job, staff, and project scheduling).

Adams, D.; Lee, C. Houston Univ., TX. Sponsor: National Aeronautics and Space Administration, Washington, DC. 1991 27 p.
In Research Inst. for Advanced Computer Science, Networking as a Strategic Tool Order as N92-12497/3
Accession Number: N92-12506/1/XAB

Electronic Data Interchange (EDI): Using Electronic Commerce to Enhance Defense Logistics

Electronic data interchange (EDI) has been advocated as one of the most important applications of computer technology, and one that holds the greatest potential for improving the nation's productivity -- for with EDI will come "electronic commerce," a technology that will allow both private and public sector businesses to move from a paper-based world to one based solely on electronic transactions. Each EDI transaction is formatted in such a way that it can be recognized and processed by a firm's computer without human intervention -- that is to say, without the need for a person to interpret the transaction for the computer. Even more important, EDI enables businesses as well as DoD to use many new techniques in pursuit of more effective resource management.

Payne, J. E.; Anderson, R. H. RAND Corp., Santa Monica, CA. Report No.: RAND/R-4030-P/L 1991 130 p.
Accession Number: AD-A238 559/9/XAB

Business Case for Electronic Commerce

The Defense Logistics Agency has been designated as DoD's Executive Agent for Electronic data interchange and Data Protection. One of its first tasks was to examine the economic implications of Electronic Commerce. This report presents the results of that examination. Based upon an examination of 16 key documents, we estimate that DoD could realize direct and indirect cost savings of almost $1.2 billion over a 10-year period by replacing these manually processed documents with their electronic equivalents. To achieve those savings, DoD would need to make investments totaling approximately $80 million in new systems and procedures.

Hardcastle, T. P.; Heard, T. W. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL001-06R1 Sep 90 50 p.
Accession Number: AD-A227 865/3/XAB

Teaching Gateways and Bridges To Rank Broadcast Messages for Educational Networks

Messages entering an educational information distribution network may be ranked for an ordered introduction into the network to maximize the timeliness of message arrivals over the set of users. Electronic mail, EDI documents, and broadcast news may be ranked by the users who choose to examine those messages of interest or benefit to themselves. Individuals choose to examine messages based on the message's features; a decision theoretic user interface may likewise examine features and determine which unexamined messages to present to the user. This interface may learn or estimate parameter values from user supplied relevance feedback. This knowledge may be sent to a gateway or bridge that similarly ranks messages based on their feature values and the knowledge the

gateway has gained from the user supplied relevance feedback. Means to estimate parameters and the expected performance of the gateway ranking system can be computed algebraically. Future work on this approach to ranking of messages before they enter the network will involve further analyses of the efficacy of ranking.

Losee, R. M. 26 Aug 90 17 p.
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), 3900 Wheeler Ave., Alexandria, VA 22304-5110.
Accession Number: ED-327 134

EDI's Role in a Strategy for Digital Data Exchange

The report documents the findings of an industry study panel convened under the auspices of the Computer-Aided Acquisition and Logistic Support (CALS) Industry Steering Committee and the Architecture Committee of the North American MAP/TOP User Group to determine the best near and long term strategy for the exchange of digital data between computing systems and users. The term and concept of DDE is introduced. DDE expands upon the commonly held definition of EDI which primarily addresses business transactions, and seeks to address the broader spectrum of moving general data in standard formats between systems and users. DDE is the electronic exchange (by any standard transfer mechanism), using standard formats (conforming to a formal specification), of information (of any kind), between any combination of end-users (of any kind). EDI, as used in the report, refers to American Standards Committee X12(3) and UN/ISO/EDIFACT standards and related industry implementation profiles.

Assistant Secretary of Defense (Production and Logistics), Washington, DC. Computer-aided Acquisition and Logistic Support Program. 12 Mar 90 53 p.
Accession Number: PB93-203552/XAB

Demonstration of Interfaces Between Automated Deployment Systems

This thesis is intended to demonstrate the technological feasibility of interfacing numerous automated information systems throughout the joint deployment community. Through the use of the EDI concept, deployment information can be transferred between commands which must interact in order to efficiently and effectively plan, execute, and coordinate deployment efforts. The Electronic Data Interchange is a transaction set oriented interchange which provides the means for efficient data communication. Implementation of the EDI concept will tie together systems throughout the community in support of the Joint Operation Planning and Execution System (JOPES).

Breidert, J. E.; Smart, M. J. Naval Postgraduate School, Monterey, CA. Mar 88 82 p.
Accession Number: AD-A195 387/6/XAB

SOFTWARE

Electronic Commerce User Manual

This user manual supports the Electronic Commerce Standard System. The Electronic Commerce Standard System is being developed for the Department of Defense by the Technology Information Systems Program at the Lawrence Livermore National Laboratory, operated by the University of California for the Department of Energy. The Electronic Commerce Standard System, or EC as it is known, provides the capability for organizations to conduct business electronically instead of through paper transactions. Electronic Commerce and Computer Aided Acquisition and Logistics Support, are two major projects under the DoD's Corporate Information Management program, whose objective is to make DoD business transactions faster and less costly by using computer networks instead of paper forms and postage. EC runs on computers that use the UNIX operating system and provides a standard set of applications and tools that are bound together by a common command and menu system. These applications and tools may vary according to the requirements of the customer or location and may be customized to meet the specific needs of an organization. Local applications can be integrated into the menu system under the Special Databases & Applications option on the EC main menu. These local applications will be documented in the appendices of this manual. This integration capability provides users with a common environment of standard and customized applications.

Lawrence Livermore National Lab., CA. Sponsor: Department of Energy, Washington, DC. Report No.: UCRL-CR-110424 10 Apr 92 293 p.
Accession Number: DE92013067/XAB

Guide to EDI Translation Software. 1992 Edition

This guide identifies and provides details on 110 commercially available electronic data interchange (EDI) translation software packages. It was developed for use by the Military Departments and Defense agencies as they procure EDI translation software packages in support of the Department of Defense's (DoD's) EDI program for transportation. However, other DoD entities with an EDI program should find this guide useful. This guide assesses the key features of each package, details a list of functions available in a particular software package, and highlights those features required to meet the EDI needs of Defense transportation in specific operating environments.

Frohman, H. L. Logistics Management Inst., Bethesda, MD. Report No.: LMI-PL205RD1 1992 153 p.
Updates 1991 edition.
Accession Number: AD-A255 739/5/XAB

NIST Support of the CALS Program: 1990 Synopsis

The report summarizes overall Computer-aided Acquisition and Logistics Support (CALS) program management, technical support, and administration provided by National Institute of Standards and Technology (NIST). A brief summary of some of the 1990 activities is offered in each of the general technical support areas: electronic data interchange, graphics, document standards, raster compression, data management, security, and data communication. Most of the NIST deliverables given to the CALS Office have since been published for easier access by the CALS community. The report offers the titles and brief abstracts of such published deliverables, as well as titles and abstracts for those NIST CALS deliverables published in previous years.

Kemmerer, S. J. National Inst. of Standards and Technology (CSL), Gaithersburg, MD. Report No.:NISTIR-4609 Jun 91 22 p.
Accession Number: PB91-193821/XAB

Technical Support Task Report for the Modernization of Defense Logistics Standard Systems. Volume 1. Prototype Test Report

This technical report, in three volumes, is the final report covering more than 2 years of technical activity supporting the Modernization of Defense Logistics Standard Systems (MODELS) project. The supporting activities included developing translation tables and the table-driven software for converting current fixed-length logistics data formats into new variable-length transaction equivalents. They also included designing and testing prototype hardware and software platforms that support transaction interchange between logistics sites. This volume, Prototype Test Report, is Volume I of the series. It is an Overview describing the task's purpose, results, conclusions, and recommendations from the viewpoint of four major support activities: (1) prototype logistics gateway node (LGN) construction and testing, (2) Interconnection and control of telecommunicating LGNs, (3) Electronic data interchange transaction translation and testing, (4) Network performance simulation and cost modeling.

James, W. T.; Andonyadis, C. G.; Doby, J. S.; Lycas, J.; Wilson, D. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL702R1-Vol-1 May 91 63 p.
Accession Number: AD-A243 019/7/XAB

TELECOMMUNICATIONS

Electronic Data Interchange in Message Handling Systems

Electronic Data Interchange (EDI) identifies a family of standards used for the electronic transmission of business oriented data (e.g., invoices and purchase orders). EDI standards specify data formats, but are designed independent of a communications protocol. In June, 1990, the Consultative Committee on International Telephony and Telegraphy (CCITT) drafted two Recommendations (F.435: EDI Messaging Service, X.435: EDI Messaging System) which define a standardized service and protocol for transmitting EDI data via the Message Handling System (MHS). Using the MHS, EDI data can be transferred between compatible EDI applications implemented on heterogeneous computer systems. The paper introduces the MHS, the carrier service for EDI data; and the Interpersonal Messaging Service, the only MHS application currently standardized and the model for the EDI Messaging Service. Following the introductory material is a detailed review of the EDI Messaging draft Recommendations. The transmission of EDI data via the MHS is described as well as the relationships between EDI Messaging and directory, security, and physical delivery services. Three appendices are also included in the paper. Appendix A contains a list of abbreviations. Appendix B provides a glossary of MHS terms, and Appendix C briefly describes EDI messaging elements of service.

Markovitz, P. National Inst. of Standards and Technology (CSL), Gaithersburg, MD. Sponsor: Internal Revenue Service, Washington, DC. Report No.: NISTIR-4608 Jun 91 39 p.
Accession Number: PB91-216622/XAB

Data Communication Networks Message Handling Systems. Recommendation X.435. Message Handling Systems: Electronic Data Interchange Messaging System (Re-Announcement of PB92-210509)

The Recommendation is one of a set of Recommendations for message handling (MOTIS). The entire set provides a comprehensive blueprint for a message handling system (MHS) realized by any number of cooperating open systems. The purpose of an MHS is to enable users to exchange messages on a store-and-forward basis. A message submitted on behalf of one user, the originator, is conveyed by the message transfer system (MTS) and subsequently delivered to the agents of one or more additional users, the recipients. Access units (AU) link the MTS to communication systems of other kinds (e.g., postal systems). A user is assisted in the preparation, storage, and display of messages by a user agent (UA). Optionally, it is assisted in the storage of messages by a message store (MS). The MTS comprises a number of message transfer agents (MTA) which collectively perform the store-and-forward message transfer function. The Recommendation defines the message handling application called EDI messaging (EDIMG), a form of message handling tailored for exchange of electronic data interchange (EDI) information,

a new message content type and associated procedures known as Pedi. It is designed to meet the requirements of users of ISO 9735 (EDIFACT), and other commonly used EDI systems. The Recommendation is one of a series on message handling. Recommendation X.402 constitutes the introduction to the series and identifies the other documents in it.

International Telecommunication Union, Geneva (Switzerland). International Telegraph and Telephone Consultative Committee. 1991 123 p.
Available in paper copy, U.S. sales only. All others refer to Deputy-Secretary General, International Telecommunications Union, Place des Nations, 1211 Geneva 20 Switzerland.
Accession Number: PB93-980608/XAB

U.S. GOSIP: The Challenge Ahead

The paper looks beyond the existing United States Government Open Systems Interconnection Profile (GOSIP) toward several important challenges to be met in the years ahead. The first challenge is creating effective, economical, and technically credible test policies and procedures for GOSIP. The second challenge is stimulating the strategic and tactical planning within Federal Agencies necessary to implement the provisions of GOSIP. The third challenge is adding functions to later versions of GOSIP to provide directory services, dynamic routing, security, transaction processing, and electronic data interchange. The fourth challenge is fostering and successfully pursuing international collaboration in functional standards, procurement profiles, and testing. Beyond these four challenges lies the next horizon—integrated, interoperable network management.

Mills, K. L. National Inst. of Standards and Technology (NCSL), Gaithersburg, MD. Systems and Network Architecture Division 1990 5 p.
Pub. in Computer Standards and Interfaces 10, n3 pp. 219-223 1990.
Accession Number: PB93-129666

Electronic Data Interchange (EDI); Category: Software Standard; Subcategory: Electronic Data Interchange

The publication announces the adoption, as a Federal Information Processing Standard, of recognized national and international standards for EDI. In EDI, data that would be traditionally conveyed on paper documents are transmitted or communicated electronically according to established rules and formats. The data that are associated with each type of functional document, such as a purchase order or invoice, are transmitted together as an electronic message. The formatted data may be transmitted from originator to recipient via telecommunications or physically transported on electronic storage media.

National Inst. of Standards and Technology (CSL), Gaithersburg, MD. 19 Apr 93 10 p. Supersedes FIPS PUB 161.
Accession Number: FIPS PUB 161-1/XAB

DoD Electronic Data Interchange (EDI) Convention. ASC X12 Transaction Set 858 Personal Property Shipment Information (Version 003010)

This is an electronic data interchange (EDI) systems design document that describes the standard or convention the Department of Defense (DoD) will use to send personal property shipment information using the ASC X12.18 Transaction Set 858 Shipment Information (003010).

Frohman, H. L. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DF101LN10 Apr 93 181 p.
Accession Number: AD-A268 716/8/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 859 Generic Freight Invoice (Version 003020)

This is an electronic data interchange (EDI) systems design document that describes the standard or "convention" the Department of Defense (DoD) will use to accept a transportation invoice using the ASC X12.55 Transaction Set 859 Generic Freight Invoice (003020).

Bridges, M. W.; Frohman, H. L. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DF101LN2 Apr 93 110 p.
Accession Number: AD-A268 559/2/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 858 Freight Government Bill of Lading Shipment Information (Version 003010) (Draft rept)

This is an Electronic Data Interchange (EDI) systems design document that describes the standard or 'convention' the Department of Defense (DoD) will use to send freight

Government bill of lading (GBL) shipment information using the ASC X12.18 Transaction Set 858 Shipment Information (003010).

Creedon, M. A. Logistics Management Inst., Bethesda, MD. Report No.: LMI-PL205LN1 Feb 93 364 p.
Accession Number: AD-A264 646/1/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 810 Invoice (Progress Payment) (Version 003010)

This is an Electronic Data Interchange (EDI) systems design document that describes the standard or convention the Department of Defense (DoD) will use to accept an invoice using the ASC X12 Transaction Set 810 Invoice (003010). It contains information for the design of interface computer programs that serve to link systems application computer programs and an EDI translator computer program.

Luster, S.; Modrowski, R.; James, W. T. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203LN4 Jan 93 66 p.
Accession Number: AD-A263 455/8/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 810 Invoice (Public Voucher) (Version 003010) (Draft rept)

This is an Electronic Data Interchange (EDI) systems design document that describes the standard or "convention" the Department of Defense (DoD) will use to accept an invoice using the ASC X12 Transaction Set 810 Invoice (003010). It contains information for the design of interface computer programs that serve to link systems application computer programs and an EDI translator computer program.

Luster, S.; Modrowski, R. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203LN5 Jan 93 89 p.
Accession Number: AD-A263 444/2/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 810 Invoice (Commercial) (Version 003010) (Draft rept)

This is an Electronic Data Interchange (EDI) systems design document that describes the standard or "convention" the Department of Defense (DoD) will use to accept a commercial invoice using the ASC X12 Transaction Set 810 Invoice (003010).

Luster, S.; James, W. T. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203LN2 Sep 92 69 p.
Accession Number: AD-A263 356/8/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 824 Application Advice (Version 003010) (Draft rept)

This chapter explains the purpose of the convention, the scope the guidance, and provides an explanation of how to use the convention. The convention provides general guidance on the implementation of American National Standards Institute (ANSI)

Accredited Standards Committee (ASC) X12 electronic data interchange (EDI) standards within automated information systems (AIS) and information interchange procedures that require the collection, reporting, and/or exchange of data needed to perform defense missions.

Luster, S.; Modrowski, R. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203LN5 Jan 93 89 p.
Accession Number: AD-A263 443/4/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 832 Price Sales Catalog (Version 003030) (Draft rept)

This chapter explains the purpose of the convention, the scope of the guidance, and provides an explanation of how to use the convention. The convention provides general guidance on the implementation of American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 electronic data interchange (EDI) standards within automated information systems (AIS) and information interchange procedures that require the collection, reporting, and/or exchange of data needed to perform defense missions.

Luster, S.; Modrowski, R.; James, W. T. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL108LN1 Dec 92 42 p.
Accession Number: AD-A263 442/6/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 836 Contract Award (Version 003010)

This chapter explains the purpose of the convention the scope of the guidance, and provides an explanation of how to use the convention. The convention provides general guidance on the implementation of the American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 electronic data interchange (EDI) standards within automated information systems (AIS) and information interchange procedures that require the collection, reporting, and/or exchange of data needed to perform defense missions.

Luster, S.; Modrowski, R. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203LN14 Jan 93 70 p.
Accession Number: AD-A263 404/6/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 838 Trading Partner Profile (Confirmation) (Version 003020) (Draft rept)

This chapter explains the purpose of the convention, the scope of the guidance, and provides an explanation of how to use the convention. The convention provides general guidance on the implementation of American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 electronic data interchange (EDI) standards within automated information systems (AIS) and information interchange procedures that require the collection, reporting, and/or exchange of data needed to perform defense missions.

Luster, S.; Modrowski, R. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203LN16 Jan 93 64 p.
Accession Number: AD-A263 445/9/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 838 Trading Partner Profile (Registration) (Version 003020)

The convention provides general guidance on the implementation of American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 electronic data interchange (EDI) standards within automated information systems (AIS) and information interchange procedures that require the collection, reporting, and/or exchange of data needed to perform defense missions. The guidance is provided for two components. First, it may be used by organizational elements of the DoD community. It may also be useful to organizations external to DoD that exchange data with the DoD community in the course of their business relationships.

Luster, S.; Modrowski, R. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203LN15 Jan 93 78 p.
Accession Number: AD-A263 350/1/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 840 Request for Quotation (Version 003010) (Draft rept)

This is an Electronic Data Interchange (EDI) systems design document that describes the standards or "convention" the Department of Defense (DoD) will use to transmit a Request for Quotation using the ASC X12 Transaction Set 840 Request for Quotation (003010).

Luster, S.; Modrowski, R. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203LN17 Jan 93 113 p.
Accession Number: AD-A264 461/5/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 843 Response to Request for Quotation (Version 003010) (Draft rept)

This is an Electronic Data Exchange (EDI) systems design document that describes the standards or convention the Department of Defense (DoD) will use to accept a price quotation using the ASC X12 Transaction Set 843 Response to Request for Quotation (003010).

Luster, S.; Modrowski, R. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203LN18 Jan 93 84 p.
Accession Number: AD-A264 469/8/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 850 Purchase Order (Version 003010) (Draft rept)

This is an Electronic Data Interchange (EDI) systems design document that describes the standards or convention the Department of Defense (DoD) will use to transmit a Purchase Order using the ASC X12 Transaction Set 850 Purchase Order (003010).

Luster, S.; Modrowski, R. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203LN19 Jan 93 124 p.
Accession Number: AD-A264 468/0/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 855 Purchase Order Acknowledgement (Version 003010) (Draft rept)

The convention provides general guidance on the implementation of American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 electronic data interchange (EDI) standards within automated information systems (AIS) and information interchange procedures that require the collection, reporting, and/or Exchange of data needed to perform defense missions. The guidance is provided for two components. First it may be used by organizations elements of the DoD community. It may also be used by organizations external to DoD that exchange data with the DoD community in the course of their business relationships.

Luster, S.; Modrowski, R. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203LN20 Jan 93 122 p.
Accession Number: AD-A263 351/9/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 856 Ship Notice/Manifest (Version 003030) (Draft rept)

This is an Electronic Data Interchange (EDI) systems design document that describes that standard or convention the Department of Defense (DoD) will use to accept a Ship Notice Manifest using the ASC X12 transaction Set 856 Ship Notice Manifest (003030). It contain information for the design of interface computer programs that serve to link systems application computer programs and an EDI translator computer program. Computer programmers can use this document to identify the data in a populated EDI transaction with data requirement of their specific application database. Conversley, programmers can

identify where their applications data requirement should be carried in an EDI transaction.

Luster, S.; Modrowski, R.; James, W. T. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203LN13 Jan 93 50 p.
Accession Number: AD-A263 353/5/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 860 Purchase Order Change (Version 003010) (Draft rept)

This chapter explains the purpose of the convention, the scope of the guidance, and provides an explanation of how to use the convention. The convention provides general guidance on the implementation of American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 electronic data interchange (EDI) standards within automated information systems (AIS) and information interchange procedures that require the collection, reporting, and/or exchange of data needed to perform defense missions.

Luster, S.; Modrowski, R. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203LN21 Jan 93 126 p.
Accession Number: AD-A263 405/3/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 864 Text Message (Version 003010) (Draft rept)

The convention provides general guidance on the implementation of American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 electronic date interchange (EDI) standards within automated information systems (AIS) and information interchange procedures that require the collection, reporting, and/or exchange of data needed to perform defense missions. The guidance is provided for two components. First, it may be used by organizational elements of the DoD community. It may also useful to organizations external to DoD that exchange data with the DoD community in the course of their business relationships.

Luster, S.; Modrowski, R. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203LN22 Jan 93 81 p.
Accession Number: AD-A263 354/3/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 865 Purchase Order Change Acknowledgement (Version 003010) (Draft rept)

Prepared in cooperation with Data Interchange Standards Association, the Secretariat and administrative arm of the Accredited Standards Committee X12. This chapter explains the purpose of the convention, the scope of the guidance, and provides an explanation of how to use the convention. The convention provides general guidance on the implementation of American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 electronic data interchange (EDI) standards within automated information systems (AIS) and information interchange procedures that require the collection, reporting, and/or exchange of data needed to perform defense missions.

Luster, S.; Modrowski, R. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203LN23 Jan 93 129 p.
Accession Number: AD-A263 476/4/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 869 Order Status Inquiry (Version 003020) (Draft rept)

This is an Electronic Data Interchange (EDI) systems design document that describes the standard of convention the Defense Logistics Agency will use to permit vendors to request order status data using the ASC X12 Transaction Set 869 Order Status Inquiry (003020). It contains information for the design of interface computer programs and an EDI translator computer program. Computer programmers can use this document to identify the data in a populated EDI transaction with data requirement of their specific application database. Conversely, programmers can identify where their applications data requirement should be carried in an EDI transaction.

Luster, S.; Modrowski, R.; James, W. T. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203-LN10 Dec 92 45 p.
Accession Number: AD-A263 352/7/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 870 Order Status Report (Version 003020)

This is an Electronic Data Interchange (EDI) systems design document that describes the standard or convention the Defense Logistics Agency will use to provide order status data to vendors using the ASC X12 Transaction Set 870 Order Status Report (003020). It contains information for the design of interface computer programs that serve to link systems application computer programs and an EDI translator computer program.

Luster, S.; Modrowski, R.; James, W. T. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203-LN11 Dec 92 42 p.
Accession Number: AD-A263 446/7/XAB

DoD Electronic Data Interchange (EDI) Convention: ASC X12 Transaction Set 997 Functional Acknowledgement (Version 003010) (Draft rept)

The convention provided general guidance on the implementation of American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 electronic data interchange (EDI) standards within automated information systems (AIS) and information interchange procedures that require the collection, reporting, and/or exchange of data needed to perform defense missions. The guidance is provided for two components. First, it may be used by organizational elements of the DoD community. It may also be useful to organizations external to DoD that exchange data with the DoD community in the course of their business relationships.

Luster, S.; Modrowski, R.; James, W. T. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203LN7 Jan 93 70 p.
Accession Number: AD-A263 355/0/XAB

DoD Implementation Guidelines for Electronic Data Interchange (EDI). Volume 1

Electronic data interchange is the computer-to-computer exchange of routine digital business information in an agreed upon standard. It is commonplace in many private companies and promises to become the preferred method for conducting all business in the future. With the appropriate computer hardware, software, and communications, businesses can eliminate the tedious flow of paper purchase orders, invoices, shipping forms, technical specifications, and other documents and replace them with their electronic equivalents. These guidelines provide general guidance on the implementation of American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 electronic data interchange (EDI) standards within automated information system (AIS) and information interchange procedures that require the collections, reporting, and/or exchange of data needed to perform Defense missions. The guidance is provided for two components. First, it may be used by organizational elements of the DoD community. It may also be useful to organizations external to DoD that exchange data with the DoD community in the course of their business relationships. Many of these organizations also engage in the planning, development, test and evaluation, standardization, implementation and/or maintenance of ANSI ASC X12 standards in automated system applications and associated information interchange procedures.

Henderson, M. M.; Lewis, A. P. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL001-01R1 Dec 91 134 p.
Accession Number: AD-A246 613/4/XAB

DoD Implementation Guidelines for Electronic Data Interchange (EDI). Volume 2

This document establishes a baseline of DoD's conventions for implementing the American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 uniform standard for the electronic interchange of business transaction. The DoD transaction set conventions are defined. It includes the instructions for implementing the control structure and definitions of the usage indicators and applicable codes. In addition to the communication control structure, the EDI structure provides the standards user with

multiple levels of control to ensure data integrity. It does so by using header and trailer control segments designed to identify uniquely the start and end of the interchange functional groups and transaction sets.

Henderson, M. M.; Lewis, A. P. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL001-01R1-Vol-2 Dec 91 446 p.
Accession Number: AD-A246 614/2/XAB

Change of Course: The Importance to DoD of International Standards for Electronic Commerce

The U.S. Department of Defense (DoD) is committed to using electronic commerce in the future with the over 300,000 vendors interested in doing business with DoD. Electronic commerce will move DoD from a paper-based world to one based on electronic transactions enabled by the exchange of formatted, electronic messages referred to as electronic data interchange (EDI). With electronic commerce, DoD plans to reduce costs, increase effectiveness, and make it easier for vendors to deal with DoD. Benefits from electronic commerce are enhanced when many businesses use the same standards for EDI messages themselves and their transmission. The fewer standards used, the less time and resources must be spent translating messages and agreeing on how to use different standards. To enhance benefits and smooth the transition to electronic commerce for itself and its vendors, DoD has chosen to use the widely accepted American National Standards Institute (ANSI) X12 standards for EDI messages, coupled with international standards for delivering messages and organizing addresses. In the past 18 months, EDI standards sponsored by a United Nations body and serving the same purpose as ANSI X12 message standards have begun to gain wider acceptance internationally.

Payne, J. E. RAND Corp., Santa Monica, CA. Report No.: RAND/R-4088-PL 1991 78 p.
Accession Number: AD-A253 199/4/XAB

Results of the Work of the International Organization of Standardization (ISO) (and International Electrotechnical Commission (IEC)) on the "Open-EDI Conceptual Model" and Its Importance for EDI Developments

Presented at the World EDI Forum held in Brussels (Belgium) on September 3, 1991. The purpose of the presentation to the "World Electronic Data Interchange (EDI) Forum" is five-fold; namely: to introduce the International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) and their responsibilities for international standardization; to identify the need for an overall model for EDI standards development; to summarize the organization and work of "ISO/IEC Joint Technical Committee 1 (JTC1) Special Working Group (SWG)-EDI"; to present the results of the work and key components of the Open-EDI model; and, to highlight the importance of the Open-EDI model for EDI developments.

Knoppers, J. V. T. Canaglobe International, Inc., Montreal (Quebec). 1991 21 p.
Accession Number: PB92-169135/XAB

Canadian Participation in the Development of EDI Standards

Electronic data interchange (EDI) standards are essential for communications between different computers, equipments and terminals. These standards are developed by independent non-government organizations on a voluntary basis. This report highlights some of the standards used in EDI communication, who assembles these, and the way they are processed in order to be acceptable standards at the domestic and international levels.

Malhotra, S. National Office, Port Information Systems, Ottawa (Ontario). Report No.: SSC-CO22-97/1990; ISBN-0-662-57942-9 c1991 178 p.
Text in English and French (Bilingual). On cover: EDI, electronic data interchange.
Accession Number: MIC-91-03861/XAB

Transmission of Technical Information Specified in MIL-STD-1840A Through the Use of X12 EDI Transaction Set 841 (Draft rept)

The report first introduces the concept of X12 EDI transaction set, it then reviews the progress in the development of Transaction Set 841 for Specification/Technical Information by the ANSI X12 Product Data Project team. A proposal on how the transaction set could be used for transmission of MIL-STD-1840A data in an EDI environment is presented.

Saltman, R. G.; Su, D. H. National Inst. of Standards and Technology (NCSL), Gaithersburg, MD. Advanced Systems Div. Sep 89 28 p.
Accession Number: PB91-175745/XAB

SECURITY

Workshop on Security Procedures for the Interchange of Electronic Documents: Selected Papers and Results

Contents: Linking Security and the Law of Computer-Based Commerce; Balanced Electronic Data Interchange Security; The Need for Risk Analysis; Health Care Perspective on Security Procedures for EDI; On the Optimal Expenditure of Computer Security Costs; The Legal Viability of Electronically Submitted Environmental Compliance Reports; Authenticity and Assurance; What Price Data Security; Security Requirements and Evidentiary Issues in the Interchange of Electronic Documents: Steps Toward Developing a Security Policy.

Saltman, R. G. National Inst. of Standards and Technology (CSL), Gaithersburg, MD. Report No.: NISTIR-5247 Aug 93 128 p.
Accession Number: PB94-101854/XA

Risk Assessment Methodology for EDI Unclassified/Sensitive Information Systems

Because it is not cost-effective to implement more security procedures than a particular environment requires, defining security requirements based on the results of a thorough risk analysis provides an effective way to control the cost of security for information systems. The steps involved in the EDI risk assessment methodology presented in this paper are the same basic steps found in most types of risk assessment: define assets, review threats, identify security requirements, and select protective countermeasures. The methodology addresses all of the primary threats to an EDI application system and its data, which include the following: unauthorized disclosure of data, unauthorized modification of data, sender repudiation of transactions, receiver repudiation of transactions, unauthorized system access, and lack of system availability.

Smith, J. A. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203R3 May 93 30 p.
Accession Number: AD-A268 676/4/XAB

Defense Transportation's EDI Program: A Security Risk Assessment

As the Department of Defense (DoD) implements electronic data interchange (EDI) techniques to replace documents in its transportation processes, security issues must be addressed. This report describes Defense transportation's EDI operating concept and the current Federal and DoD security laws, guidelines, and documents that are applicable to EDI programs. The security measures and internal controls implemented in Defense transportation's EDI program are also documented.

Frohman, H. L.; Ledder, W. R. Logistics Management Inst., Bethesda, MD. Report No.: LMI-PL205LN5 May 93 18 p.
Accession Number: AD-A268 612/9/XAB

Assessing Federal and Commercial Information Security Needs

The study assesses the current and future information technology (IT) security needs of the commercial, civil, and military sectors. The primary objectives were to: determine a basic set of information protection policies and control objectives that pertain to the secure processing needs of organizations within all sectors; and identify protection requirements and technical approaches that are used, desired or sought so they can be considered for future federal standards and guidelines. The findings of the study address the basic security needs of IT product users, including system developers, end users, administrators, and evaluators. Security needs have been identified based on actual existing and well-understood security organizational practices.

Ferraiolo, D. F.; Gilbert, D. M.; Lynch, N. National Inst. of Standards and Technology (CSL), Gaithersburg, MD. Computer Security Div. Report No.: NISTIR-4976 Nov 92 45 p.
Accession Number: PB93-138956/XAB

TRANSPORTATION

Doing Business with DoD Using Electronic Data Interchange. An Information Package for Defense Freight Shipping Activities

The Department of Defense (DoD) is encouraging the application of electronic data interchange (EDI) techniques to replace paper documents in its transportation processes. In keeping with that emphasis, the Military Traffic Management Command (MTMC) and DoD finance centers are anxious to establish an EDI relationship with freight carriers. This information package is designed to assist Defense freight shipping activities in transitioning from the traditional paper operating environment to an EDI environment. This report defines EDI in Defense transportation and describes the freight EDI operating concept along with the EDI standards and DoD conventions intended for use by Defense shipping activities, MTMC, DoD finance centers, and freight carriers. The necessary components to implement an EDI program, such as computer hardware, EDI software, and the EDI value-added network, are also described providing Defense freight shipping activities general guidance on how to initiate and conduct EDI freight business with MTMC and the commercial freight carrier industry.

Frohman, H. L.; Ledder, W. R. Logistics Management Inst., Bethesda, MD. Report No.: LMI-PL205LN3 Apr 93 30 p.
Accession Number: AD-A268 675/6/XAB

Doing Business with DoD Using Electronic Data Interchange: An Information Package for Freight Carriers

The Department of Defense (DoD) is encouraging the application of electronic data interchange (EDI) techniques to replace paper documents in its transportation processes. In keeping with that emphasis, the Military Traffic Management Command and DoD finance centers are anxious to establish an EDI relationship with freight carriers. This information package is designed to assist freight carriers in transitioning from the traditional paper operating environment to an EDI environment. This report defines EDI in Defense transportation and describes the freight EDI operating concept along with the EDI standards and DoD conventions intended for use by freight carriers and DoD. The necessary components to implement an EDI program, such as computer hardware, EDI software, and the EDI value-added network, are also described providing freight carriers general guidance on how to initiate and conduct EDI freight business with Defense transportation.

Bridges, W. M.; Yee, T. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DF101LN9 Mar 93 31 p.
Accession Number: AD-A264 757/6/XAB

Intermodal Movement of Marine Containers

The past few decades have witnessed incredible technological advancement in the international liner trade. Some port facilities now have semi-automated cranes with twin hoists (capable of lifting two 20-foot containers simultaneously) and dual hoists (two

hoists on a single crane). Intermodal container transfer facilities are located both on-dock and off-dock. Automatic equipment identification is now being introduced in the form of machine-readable tags on containers and other equipment. Electronic data interchange facilitates communication. And double-stack trains move marine containers efficiently over long distances. The report deals with many of the issues that ocean carriers, railroads and ports have confronted in recent years. Specific innovations are described along with their economic, regulatory, political and labor-related aspects.

Marcus, H. S. Massachusetts Inst. of Tech., Cambridge. Dept. of Ocean Engineering. Sponsor: National Sea Grant Coll. Program, Silver Spring, MD. Report No.: MITSG-92-21; ISBN-1-56172-007-0 c1993 273 p.
Accession Number: PB93-158244/XAB

Electronic Commerce Strategy for MTMC's Guaranteed Traffic Program

The Military Traffic Management Command's (MTMC's) Guaranteed Traffic (GT) program will grow substantially over the next several years. This report offers a strategy to streamline the GT program using automated systems and electronic data interchange technology. It recommends that MTMC accept transportation rates from commercial carriers via the American National Standards Institute ASC (Accredited Standards Committee) X12 data standards and VAN (value-added network) communications services. Those rates would then be processed using a customized MTMC computer system. By automating the GT program, current MTMC personnel should efficiently handle the increase workload.

Creedon, M. A. Logistics Management Inst., Bethesda, MD. Report No.: LMI-MT901R1 Oct 92 46 p.
Accession Number: AD-A264 299/9/XAB

Electronic Data Interchange Prototype for Exchanging Personal Property Shipment Information

An EDI prototype system for exchanging personal property shipment information with the Defense Finance and Accounting Service Indianapolis Center (DFAS-IN) using the American National Standards Institute (ANSI) X12 858 Transaction Set was developed and implemented at Military Traffic Management Command's Personal Property Directorate (MTMC-PP). The purpose of the prototype was to provide MTMC-PP personnel with operational and technical experience before the directorate converts to an EDI production environment. This report presents the operating concept used in the prototype system for exchanging shipment information between MTMC-PP and DFAS-IN, the findings that emerged from testing the prototype, the recommendations for improving the electronic exchange of personal property information between MTMC-PP and DFAS-IN, and an implementation plan for converting the prototype into a production system.

Bridges, W. M.; Frohman, H. L. Logistics Management Inst., Bethesda, MD. Report No.: LMI-MT001R1 Mar 92 25 p.
Accession Number: AD-A260 908/9/XAB

Potential Military Application of Commercial Intermodal Equipment Advancements: An Alternative to the Stockpiling of National Defense Features (Rept. for Aug 89-Oct 90)

The purpose of the study is to address alternatives to stockpiling National Defense Features (NDF)/Sealift Enhancement Features (SEF) and secondly to examine possible day-to-day commercial utilization of Government developed and procured NDFs/SEFs. Within the context of alternatives to stockpiling NDFs/SEFs the study explores and identifies intermodal industry technology advancements that may have military logistics application thereby, reducing the demand on the military to develop and procure their own specialized equipment. These technologies included advancements in Electronic Data Interchange, the Open-All Container, the Caged Flatbed, a Self-Propelled Intermodal Vehicle, the Road Railer, Low-Clearance Rail Bogies, the Camelback Pallet Trailer, the Spine Car, the ROLLOADER, a Secured Modular Automotive Rail Transport System, Tank Containers, and All Side Opening Container. These technologies are in varying degrees of development. Suggestions on improvements that could enhance the military applications of each are contained within the study. Secondly, the study assesses equipment/technologies developed for the NDF/SEF program for their commercial utility. The study identifies those NDFs/SEFs that show the greatest commercial utility and how each may be employed to benefit both industry and Government.

Byrne, W. A.; Dillman, T. A. Presearch, Inc., Arlington, VA. Sponsor: Maritime Administration, Washington, DC. Office of Technology Assessment. Report No.: MA-RD-840-90015 5 Oct 90 130 p.
Accession Number: PB91-117408/XAB

LINK (Logistics Information Network): LINK Final Functional Specification Document, Headquarters United States European Command, APO New York, NY 09131

During the past six years the LINK (Logistics Information Network) Prototype became operational in December 1984, it was effectively used by the Transportation Community of USEUCOM (US European Command Headquarters) for free text and fixed format electronic mail. It was used by other Logisticians at the strategic levels of planning and decision support for the same purpose, but to a lesser extent because of the LINK prototype unclassified communications medium. Now that LINK has demonstrated the capability to achieve the elusive goal of "Supply item in (approximately) transit visibility", it is very important to develop LINK to its full potential and satisfy the two most important goals initially conceived for LINK. They are: Support of the crisis management staff and the decision makers", and "computer to computer" data transfer. Both goals are now feasible and within the scope of the LINK and EC EDI Projects now in process under DoD charter. This study recommends that LINK be adopted as the "network of choice" for the day by day staff communications of the USEUCOM logistics staff. This should satisfy the urgent need of the USEUCOM Crisis Management Support Staffs to have access to this type of "in-place, in-transit visibility" of logistics resources for "time sensitive planning and rational resource allocation decisions". This will eliminate a system support weakness which has been shown repeatedly during re-enforcement exercises. The focus of this functional specification document is on the information requirements of the strategic level logistics staffs at the crisis management centers at USEUCOM and the Service

Components. Questions associated with the aggregation of sensitive logistics data are being addressed and solved by the LINK Project Office and Security.

Evans, G. G. Lawrence Livermore National Lab., CA. Sponsor: Aviation Logistics Consulting, Cincinnati, OH (United States); Department of Energy, Washington, DC. Report No.: UCRL-CR-105009 Aug 90 64 p.
U.S. Sales Only.
Accession Number: DE91017442/XAB

Port Information Systems Around the World Text in English and French (Bilingual). On cover: EDI: Electronic data interchange.

Electronic data interchange (EDI) is the electronic alternative to the mass of paper required in international trade and transport. This report highlights the work being done in introducing EDI at various seaports and airports in the U.S., Europe, Canada, and Australia.

Malhotra, S. Department of Communications, Ottawa (Ontario). Port Information Systems. Report No.: SSC-CO22-89/1990; ISBN-0-662-57193-2 c1990 132 p.
Accession Number: MIC-90-06956/XAB

Department of Energy/Contractor Electronic Data Interchange Taskforce: Automated Transportation Management Strategic Plan

The purpose of the Automated Transportation Management Systems (ATMS) Program is to identify possible applications for the use of electronic data interchange (EDI) and other computer Traffic Management applications within the US Department of Energy (DOE), Transportation Management Division (TMD). The ATMS Strategic Plan and Program Description has been prepared as a source document for use in guidance and planning for the implementation of EDI and other computer-related technologies in the DOE-TMD organization. The ATMS strategy and program description has been prepared as a source document or use in the guidance and planning for EDI and other computer-related technologies within the DOE-TMD transportation program. This strategy provides a structure for long-term computer resources investment planning. This document has been generated under the sponsorship of DOE-HQ TMD in order to provide a "shared vision"" of the use of EDI and the development of ATMS so that the field offices and the site contractors can develop their own respective tactical and funding plans.

Portsmouth, J. H.; Genoni, S. K. Westinghouse Hanford Co., Richland, WA. Sponsor: Department of Energy, Washington, DC. Report No.: DOE/RL-89-27 Sep 89 166 p.
Paper copy only, copy does not permit microfiche production.
Accession Number: DE90004789/XAB

Electronic Future for Defense Transportation Management

Paper has long has been the standard medium for recording and communicating transportation transactions in the Department of Defense. Paper's time has now passed; the future is in electronics. Successful private-sector firms conduct much of their transportation business electronically. They use techniques generally referred to as electronic data

interchange (EDI) to improve productivity, reduce staffing, and strengthen financial control. The same payoffs are available to DoD's transportation activities. To obtain those payoffs, however, DoD needs to undertake six major initiatives simultaneously: 1) Establish an EDI Program Office to coordinate entry into an electronic environment; 2) Upgrade the electronic processing capabilities at DoD payment centers; 3) Install EDI capability at 145 of the largest shipping activities; 4) Coordinate the development of automated systems within the Military Services, Defense Logistics Agency, Military Traffic Management Command, and General Services Administration; 5) Configure a telecommunications network linking shippers, consignees, commercial carriers, payment centers, and other transportation activities. Include, as part of the network, commercial telecommunication services. 6) Modify Federal regulations and DoD directives and instructions that inhibit DoD from conducting its transportation business, both domestic and international, electronically.

Heard, T. W.; Bridges, W. M. *Logistics Management Inst., Bethesda, MD.* Report No.: LMI-AL711R1 Jan 88 125 p.
Accession Number: AD-A194 248/1/XAB

Electronic Data Interchange in Defense Transportation

In a previous study for the Office of the Secretary of Defense, we found that the private sector was beginning to make extensive use of techniques for the electronic exchange of transportation information. We also concluded that those techniques - Electronic Data Interchange (EDI) - could be applied in Defense Transportation and proposed that DoD undertake a demonstration test to establish the feasibility of electronically exchanging Government Bill of Lading and freight invoice information between its transportation activities and private motor carriers. This report presents the results of that test. Test results show that the DoD can substantially reduce its transportation paperwork by using EDI techniques to pass transportation information. The benefits from doing to include reduced clerical effort, greater accuracy, and more timely information. For the DoD to obtain those benefits, some organizations will find it necessary to realign organizational and functional responsibilities and to change business methods and operating procedures. To ensure that the DoD embarks on an effective and productive EDI program, we recommend that the Assistant Secretary of Defense (Production and Logistics) prepare a long-range plan for implementing EDI, upgrade DoD's largest freight payment center to operate in an electronic environment, and prescribe use of the EDI standard developed by the transportation industry.

Heard, T. W.; Ledder, W. R. *Logistics Management Inst., Bethesda, MD.* Report No.: LMI-ML538R1 Oct 87 185 p.
Accession Number: AD-A196 468/3/XAB

Department of Defense Cargo Management Systems

This report catalogs close to 100 data processing systems that assist the Military Departments, Defense Logistics Agency, and the Transportation Operating Agencies in managing the movement of cargo. Most of the systems are old and operate on hardware that runs at or near capacity. All major defense transportation organizations are developing replacement systems, and many will be operational in the late 1980's. But many of these systems will not have the capability to transfer transportation information electronically

from one computer to another; nor will they be sufficiently integrated to correct many of the existing system inefficiencies. To assure better systems integration and interface capability, it is recommended that DoD explore the use of Electronic Data Interchange (EDI) concepts that are gaining widespread acceptance in private industry and which enable that computer-to-computer exchange of transportation information. It is also recommended that OSD task the key transportation organizations to prepare long-range information system plans that specify existing and future automation efforts, and that OSD sponsor forums for senior defense transportation managers where these plans are reviewed with emphasis on identifying barriers to increased systems integration and alternatives for eliminating those barriers.

Heard, T. W.; Rozycki, R. F. Logistics Management Inst., Bethesda, MD. Report No.: LMI-ML424 Nov 85 89 p.
Accession Number: AD-A161 873/5/XAB

Electronic Exchange of Transportation Shipment Information

This report presents a demonstration plan for the electronic exchange of Government Bill of Lading information using Electronic Data Interchange (EDI) concepts. EDI concepts are based on widely accepted transaction set standards that permit the computer-to-computer exchange of transportation information. The report identifies transportation activities that should participate and presents a preliminary design for the demonstration.

Heard, T. W.; Ledder, W. R. Logistics Management Inst., Bethesda, MD. Report No.: LMI-ML517 Nov 85 39 p.
Accession Number: AD-A161 899/0/XAB

Automated Carrier Interface Project: An Application of Electronic Data Interchange in Ocean Transportation. Volume 1. Executive Summary (Final rept. Jun 81-Jul 85)

The report presents the executive summary of a report which documents the concept, accomplishments, and recommendations of the development and demonstration of computer-to-computer exchange of transportation information between members of the U.S. flag ocean carrier industry and the Department of Defense. Electronic Data Interchange (EDI) standards were used in developing the concepts for exchange of offering/booking, container status, and carrier billing data.

Troup, K. Council of American-Flag Ship Operators, Washington, DC. Sponsor: Maritime Administration, Washington, DC. Office of Research and Development. Report No.: MA-RD-770-85037 Jul 85 24 p.
Accession Number: PB86-144151/XAB

PROCUREMENT/CONTRACT MANAGEMENT

Electronic Payment in DoD Contracting

Electronic payment methods are rapidly changing the way in which invoices are paid, displacing the traditional paper check method Electronic payments can provide a secure, rapid, accurate, and cost effective means for issuing and receiving payment, if properly implemented. This study provides an assessment as to whether or not the expanded use of electronic payments for DoD contracts is improving the payment process. Three DoD contract paying activities which have implemented electronic payment systems are examined: DFAS-Columbus Center (MOCAS system), Aviation Supply Office, Philadelphia (IDA system), and DFAS-Cleveland STARS/SEPS system). An analysis of these systems, their objectives, and the difficulties associated with DoD payment/accounting processes is presented. A survey of defense contractors provides an assessment of electronic payment usage in private industry, as well as an evaluation of DoD's electronic payment capabilities from a customer perspective. Several suggestions which may help make DoD electronic payment capabilities more effective will be offered.

Smith, D. J. Naval Postgraduate School, Monterey, CA. Jun 93 260 p.
Accession Number: AD-A269 738/1/XAB

Improving Procurement Through Process Redesign

Advanced information technologies permit the gathering and coordination of procurement information through electronic data bases, networks, and workstations. However, before these technologies can be applied, procurement processes should be redesigned to eliminate paperbased work elements and procedures and to eliminate any non-value-added tasks. This study recommends changes to procurement processes.

Drake, D. J. Logistics Management Inst., Bethesda, MD. Report No.: LMI-PL022RD1 Dec 92 27 p.
Accession Number: AD-A268 677/2/XAB

Electronic Data Interchange in U.S. Navy Contracting Activities

Electronic Data Interchange (EDI) the computer-to-computer or more specifically the application-to-application exchange of business data in a standard format. Achieving the large savings mandated by Defense Management Review Decision (DMRD) 941 requires integration of EDI capability into Navy automated procurement systems. This thesis examines the use of EDI in the U.S. Navy procurement function, as well as areas for expanded utilization of EDI, current barriers to implementation, and lessons learned while planning and implementing EDI initiatives. U.S. Navy EDI initiatives involve a wide range of projects in the procurement process. The initial areas targeted are the high volume found in the small purchase area, and delivery orders against established contracts. A major barrier to full use of EDI in U.S. Navy contracting activities are the legal and regulatory impediments, resulting from a lack of specific guidance in the Federal

Acquisition Regulation. Contributing to the success of EDI are command involvement, functional area participation, and networking among users.

Jensen, P. T. Naval Postgraduate School, Monterey, CA. Dec 92 132 p.
Accession Number: AD-A261 870/0/XAB

Paperless Procurement: The Impact of Advanced Automation

Advanced information technologies permit the gathering and coordination of procurement information through electronic data bases networks, and workstations. Additionally, procurement processes can now be streamlined and automated to create a new paperless work environment. The new procurement systems will have great impact on the way work is performed, the number and skills of contracting personnel, and market and procurement organization structure. This study is intended to help DoD procurement managers understand and deal with the changes that advanced information technologies will bring about in procurement.

Drake, D. J.; Kelley, G. T.; Crosslin, R. L. Logistics Management Inst., Bethesda, MD. Report No.: LMI-PL022R1 Sep 92 134 p.
Accession Number: AD-A256 376/5/XAB

Electronic Commerce: Removing Regulatory Impediments

Electronic Commerce techniques, such as electronic mail and electronic data interchange (EDI), enable Government agencies to conduct business without the use of cumbersome paper documents. The benefits include reduced paper-handling costs, lower clerical costs, fewer data errors, faster communications, easier access to information, and better customer service. Regulatory impediments, however, are restricting the ability of Government agencies to actually obtain those benefits. The primary impediment is the Federal Acquisition Regulation's requirement that Government agencies use paper forms and manual signatures when conducting procurement and contract administration actions. Other impediments are similarly limiting the application of Electronic Commerce techniques in the areas of accounting, transportation, and supply. This report recommends a number of specific changes to the Federal Acquisition Regulation and identifies a variety of other regulations and documents that are impeding the application of Electronic Commerce techniques within DoD. It also recommends that the DoD Executive Agent for Electronic Commerce and Electronic Data Interchange require all participants in DoD's Electronic Commerce Program to include regulatory and procedural reviews in their program plans. Electronic Commerce, Electronic Data Interchange, Federal Acquisition Regulation, Defense Federal Acquisition Regulation Supplement.

Drake, D. J.; Ciucci, J. A.; Ledder, W. R. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203R1 May 92 62 p.
Accession Number: AD-A252 691/1/XAB

Electronic Data Interchange Opportunities in Defense Procurement

This report identifies the DoD buying activities with the greatest opportunity to benefit from electronic data interchange (EDI) techniques. A list of 38 buying activities (from DoD's 1,300 buying activities) and the expected direct cost savings from implementing

EDI is provided. The assessment of EDI opportunities is based on a review of procurement action volume, estimated EDI implementation rates, and cost savings per document. Changes in DoD business volumes from functional and management consolidations were considered in developing the volume and savings estimates.

Drake, D. J. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL203R2 May 92 60 p.
Accession Number: AD-A252 664/8/XAB

Maximization of Automatic Payment of Invoices (API) in the Contract Payment Function

The Mechanization of Contract Administration Services (MOCAS) system pays contractor invoices automatically if data base information exactly matches corresponding invoice information. Invoices are paid manually if an error has been made anywhere in the data input process, or in cases where a decision (usually at the payment clerk level) is required to control expenditure of government funds. This study estimated that a manual payment costs $20 more than if the payment was solely automatic. A Pareto analysis of frequency data developed for this study identified eight manual material acceptance and accounts payable record (MAAPR) messages for in-depth cost benefit analysis. The results showed numerous manual payments could be avoided by implementing several, mostly minor, procedural and MOCAS system changes. Major changes involve recommending implementation of several electronic data interchange (EDI) initiatives identified in the study. Implementing all the recommendations in this study would save DLA over $10 million annually, as well as increase the speed and accuracy with which it pays contractors.

Boyce, J. M.; Curtis, J. R.; Modic, E. J.; McKinney, J. S. Defense Contract Management Region, Chicago, IL. Report No.: DMCR-91-P00008 Sep 91 75 p.
Accession Number: AD-A242 131/1/XAB

Electronic Commerce and Competitive Procurement

Explains the application of electronic commerce techniques (electronic data interchange (EDI), electronic mail (E-mail), electronic bulletin boards and facsimile) to competitive procurement. This report looks at how electronic solicitations and electronic bids/proposals can be used under the large-purchase procedures of the Federal Acquisition Regulation (FAR). Changes to the FAR to recognize electronic commerce are recommended. Also discussed are opportunities to use electronic commerce and small business and legal considerations of electronic commerce. This report describes how electronic business and technical data can be organized in electronic solicitations and proposals using X12 EDI, X.400 E-mail, and Computer-aided Acquisition and Logistic Support (CALS) standards.

Drake, D. J.; Ciucci, J. A. Logistics Management Inst., Bethesda, MD. Report No.: LMI-PL006R1 Jun 91 60 p.
Accession Number: AD-A238 831/2/XAB

Electronic Data Interchange in Procurement

Evaluates the issues associated with implementation of electronic data interchange (EDI) to Government procurement. Provides detailed analysis of the advantages of EDI and how it can be applied to primarily small purchases under Federal Acquisition Regulation (FAR) Part 13. Provides a sample trading partner agreement and recommends changes to the FAR to recognize EDI in Government procurement. This report also discusses such issues as electronic signatures, electronic records, paperless contracting, legal sufficiency, small business opportunities, security of competition-sensitive information, and implementation.

Drake, D. J.; Ciucci, J. A.; Milbrandt, B. Logistics Management Inst., Bethesda, MD.
Report No.:LMI-PL904R1 Apr 90 88 p.
Accession Number: AD-A221 112/6/XAB

Electronic Commerce

Electronic Commerce, or E-Commerce, is commercial transaction (e.g., buying and selling of goods and information) via computers. The term applies particularly when computers perform a significant role beyond the tracking of details in support of human decisions. Obviously, many tasks, essential to modern commercial life, should be reassigned from people to computers. However, a chicken and egg dilemma retards change: Without supply there is no demand for such services, and without demand there is no supply. Once this dilemma is broken, the system should grow on a wave of positive feedback. This report describes many aspects of E-Commerce and its potential benefits: electronic gathering of needed pre-purchase information; E-CBD; methods for E-payments, including E-checks and E-stamps; distribution and delivery systems; E-advertisement; and Business Communication Protocols for computer/computer and for computer/man communication. Other topics include the potential problem of overselling, examples of E-Commerce start-up problems in the banking industry, and USC/ISI's Project FAST, an example of a project with the potential for breaking the dilemma, in a specific domain. We believe that integration of all computerized systems, both inter- and intra-organizational, is the key to the success of E-Commerce. Without a unified public E-marketplace encouraging large numbers of sellers and buyers, and without accepted business communication protocols, small systems may proliferate independently and separately.

Cohen, D. University of Southern California, Marina del Rey. Information Sciences Inst.
Report No.: ISI/RR-89-244 Oct 89 48 p.
Accession Number: AD-A214 261/0/XAB

Greater Buyer Effectiveness Through Automation

Computer and information technologies can improve the procurement process in DoD through reduced lead times, smarter decisions, and better selection of supplies and services. Many existing systems have demonstrated improved management reporting and contract instrument generation. However, greater benefits are possible through application of paperless processes, expert systems, and electronic interfaces. DoD procurement automation should not be directed at just paper efficiencies by at improving buyer effectiveness. This report reviews the current state of procurement automation in DoD and

recommends strategic direction and objective for DoD to take advantage of technology's potential. Nine major systems are reviewed in depth while all significant automated procurement systems are listed.

Drake, D. J. Logistics Management Inst., Bethesda, MD. Report No.: LMI-PL804R1 Jan 89 147 p.
Accession Number: AD-A206 701/5/XAB

FAST Workstation Project Overview

The FAST Workstation and the FAST Broker projects are companion efforts, which jointly seek to demonstrate a model for the pursuit of electronic commerce. This model is being installed in a system supporting procurement of standard electronic parts at low cost with short lead times, which seeks to provide a useful purchasing and information service to DoD and the DARPA VLSI research community. The FAST Broker project focuses on utilization of rapid electronic networks to provide an intermediary that speeds communications between buyers and vendors. The FAST Workstation project focuses on the development of user and software interfaces to enable human participants in the process to easily integrate information and engage in transactions with the system. This overview of the FAST Workstation project is divided into four parts. Section 1 describes the research goals of the effort. Section 2 discusses the relationship between those research goals and the somewhat more applied goals of the overall FAST effort. Section 3 reviews our research approach in the four major activity areas of the project. Section 4 summarizes accomplishments to date.

Neches, R. University of Southern California, Marina del Rey. Information Sciences Inst. Report No.: ISI/RR-88-203 Jul 88 27 p.
Accession Number: AD-A197 924/4/XAB

FINANCE

Implementation of Electronic Funds Transfer for Transportation Vendor Payment

This report describes the electronic funds transfer (EFT) payment options that are available to payment activities as they explore EFT implementation. It evaluates those payment options and recommends the options that should be implemented at the Defense Finance and Accounting Service - Indianapolis Center. The report describes how EFT and electronic data interchange (EDI) can be integrated and presents a plan for implementation.

Bridges, W. M.; Kaplan, B. J. Logistics Management Inst., Bethesda, MD. Report No.: LMI-PL005R2 Feb 92 37 p.
Accession Number: AD-A251 446/1/XAB

Electronic Commerce Program for the Defense Finance and Accounting Service-Columbus Center

The Defense Finance and Accounting Service-Columbus Center (DFAS-CO), one of six major Department of Defense (DoD) finance centers, will process more than 12 million paper documents (contracts, invoices, payments, status requests, and acceptance reports) per year by 1994. This volume and several other favorable characteristics (stable trading partner relationships, sufficient internal automation, and few business obstacles) make DFAS-CO a ripe environment for Electronic Commerce. We identify several applications of electronic data interchange (EDI) that will enable DFAS-CO to reduce the direct cost of its operations by more than $61 million over the next 10 years. The cost to DFAS-CO of implementing an electronic-based operating environment is projected at approximately $2.1 million; DoD activities that conduct business with DFAS-CO would need to invest an additional $6.6 million. To guide DFAS-CO EDI efforts, we provide detailed operating concepts and implementation schedules for each major opportunity area, along with a single technical configuration that uses gateway software and a commercial value-added network. Implementing those operating concepts will allow DFAS-CO to satisfy current and future payment responsibilities with minimum personnel growth.

Hardcastle, T. P.; Ledder, W. R. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL001-02R1 May 91 91 p.
Accession Number: AD-A237 636/6/XAB

SUPPLY/MAINTENANCE

Feasibility of a Single Discrepancy Reporting System

The Department of Defense acquires, manages, issues, and transports an immense amount of materiel each year. Discrepancy reporting is the process of identifying and resolving problems with that materiel. Currently, discrepancy reports are processed in a predominately manual environment and are implemented under separate joint regulations. This report evaluates the feasibility of consolidating the discrepancy reporting into a standard set of procedures and integrating the automation of discrepancy reporting. The report makes recommendations on improving discrepancy reporting, whereby DoD can improve materiel availability, product quality, and service to operating units. Further, implementation of the recommendations can result in net direct cost savings of $12.8 million over 8 years.

Egan, D. F.; Featherstone, H. L.; Frome, R. J.; Ott, J. J. Logistics Management Inst., Bethesda, MD. Report No.: LMI-DL902R2 Sep 91 83 p.
Accession Number: AD-A243 801/8/XAB

TITLE INDEX

MANAGEMENT AND PLANNING

SOFTWARE

TELECOMMUNICATIONS

STANDARDS/GUIDELINES

SECURITY

TRANSPORTATION

PROCUREMENT/CONTRACT MANAGEMENT

FINANCE

SUPPLY/MAINTENANCE

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13. ABSTRACT ***(Maximum 200 words)***

This annotated bibliography of technical reports deals with electronic data interchange (EDI) used in a wide range of Department of Defense applications. The information covers an 8-year time frame from July 1985 through December 1993. We list 91 citations in chronological order categorized in the following functional areas: management and planning, software, telecommunications, standards/guidelines, security, transportation, procurement/contract management, finance, and supply/maintenance. Topics include discussions of advantages and problems encountered, standards aspects, implementation convention development, security management, Component contracting activities, and other disciplines. Also included are title and author indexes for quicker reference.

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EDI, electronic data interchange, bibliography, standards, guideline, ANSI X12, electronic commerce, transaction sets, EDI bibliography, abstracts.

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